

Abstract of the Disclosure

5 This patent describes a new method and
apparatus which allows optical cavities to be used simply
and effectively as absorption cells for the purpose of
performing sensitive absorption spectroscopy. This
method introduces a continuous-wave light beam into the
cavity using an off-axis cavity alignment geometry to
systematically eliminate the resonances commonly
10 associated with optical cavities, while preserving the
absorption signal amplifying properties of such cavities.
This reduces the complexity of the apparatus considerably
compared with other optical cavity-based absorption
methods when applied in conjunction with either cavity
15 ringdown spectroscopy or integrated cavity output
spectroscopy. This method can also be used to
characterize other optical loss processes occurring
within the cavity such as scattering or total extinction
coefficients, and to determine the losses due to the
20 cavity mirrors themselves (reflectometry).